Two new Deep-Water *Conus* Species from Barbados, West Indies

BY

FINN SANDER

Bellairs Research Institute, St. James, Barbados, West Indies

(2 Plates)

Problems inherent in collecting of deep-water mollusks dictate that a considerable number of potentially valid species, subspecies and varieties of Conidae remain undescribed. In this connection, shelf-slope margins of islands and continents in tropical regions afford the greatest opportunity for discovering new taxonomic categories of cone shells. It is not surprising, therefore, that notwithstanding previous collections by Dall (1889) and Lewis (1965) near Barbados, a number of new species of Conidae have been obtained from recent deep-water dredgings off the west coast of the island. Two of these, *Conus hunti* and *C. sanderi*, have been described by Wils & Moolenbeek (1979); another two are illustrated and discussed herein.

Conus sorenseni Sander, spec. nov.

(Figures *1* and *2*)

Holotype description: Shell is moderately heavy, small (length, 34.5mm; width, 17.5mm) and rather slender. Body whorl is straight, but distinctly convex towards the shoulder; surface shiny and smooth except for 14 weakly defined spiral grooves at the base; shoulder roundly angulate; aperture straight and narrow. Spire has 8 postnuclear whorls; protoconch eroded; earliest 2-3 postnuclear whorls appear nodulose; postnuclear whorls have 4-5 striae; lower part of spire convex. Base colour is white with faint pink bands decorated with isolated brown blotches which are more accentuated on the upper band; posterior section of body whorl has faint brown zigzag streaks in continuation with darker markings of same colour on spire whorls.

Paratypes: All sub-adults; respective lengths of paratypes 1, 2 and 3: 16.7mm, 21.6mm and 24.7mm; body whorl as in adult, but may be weakly grooved throughout; shoulder angulate; convexity of holotype spire not apparent and may suggest variability in adults; 2½ shiny, translucent, pale brown nuclear whorls; earliest 2 or 3 whorls weakly nodulose; later whorls with 4-5 striae; base colour white tinged with pale purple or pink; strength of bands and blotches variable.

Type locality: Off St. James, west coast of Barbados, West Indies, approx. 175m.

Remarks: Although *Conus sorenseni* is superficially similar to both *C. sanderi* and *C. hunti*, it differs mainly in being larger and relatively heavier. The ground colour in the adult is white contrasted to yellowish-orange and light purple for *C. sanderi* and *C. hunti* respectively. Unlike both *C. centurio* Born, 1778, which lack spiral striae, and *C. amphiurgus* Dall, 1889, which sometimes have indistinct spiral ridges, *C. sorenseni* have pronounced spiral striae. *Conus attenuatus* Reeve, 1844, also collected at the same site, is smaller and more slender. *Conus villepinii* Fischer & Bernardi, 1857, is larger than *C. sorenseni* and, unlike the latter, is moderately light in weight with numerous weak spiral and axial threads over body whorl. Shoulder in *C. daucus* Hwass, 1792, is broader, angulate to carinate, and slightly concave above; body colour never white.

Conus sorenseni appears to be a very rare cone shell, the holotype being the only adult discovered so far.

Deposition of type material: The holotype and paratype 3 are in the collection of the Zoological Museum, Copenhagen; paratypes 1 and 2 are in the respective collections of the author and Mr. Ole Sørensen.

Etymology: *Conus sorenseni* has been named after my good friend and fellow conchologist, Mr. Ole Sørensen of Rancho Santa Fe, California.

Conus knudesni Sander, spec. nov.

(Figures *3* and *4*)

Holotype description: Shell is light in weight, small (length, 23mm; width, 10.9mm) and slender. Body whorl is almost entirely straight, only slightly convex towards shoulder;

surface shiny and smooth with indistinct spiral grooves on basal third; shoulder angulate; aperture straight and narrow; outer lip thin. High concave spire has 9 postnuclear whorls and protoconch with 2½ shiny, white nuclear whorls; the first 4 post-nuclear whorls with nodulose margins; postnuclear whorls without striae. Main colour is white with two pale orange spiral bands; the base is also weakly coloured; spire whorls marked by faint orange blotches.

Paratypes: Paratype 1, sub-adult (length, 16.8mm; width, 7.4mm); paratype 2, adult (length, 22.8mm; with 10.7mm). Colour intensity and pattern of paratype 1 is similar to holotype. Shell anatomy of paratype 2 is identical to holotype, but colour markings are more pronounced and bands more variable.

Type locality: Off St. James, west coast of Barbados, West Indies, approx. 175m.

Remarks: *Conus knudseni* is very distinct in shape, spire sculpture, and what can be seen of the pattern (the fresh-dead appearance of all three shells suggests that the "bleached" colouration of two of these is a natural variation). Interestingly, live specimens of *C. mindanus* Hwass, 1792, were collected at the same site with both normal colouration and weakly toned (whitish) shells as in *C. knudseni. Conus mindanus* was easily distinguished from the latter by its larger size, relatively heavier shell and distinctly convex sides of the body whorl. *Conus jaspideus* Gmelin, 1791, is more solid, typically has conspicuous spiral ridges on anterior or entire length of body whorl, and lacks pronounced concave spire of *C. knudseni; C. sanderi* Wils & Moolenbeek, 1979, *C. hunti* Wils & Moolenbeek, 1979, and *C. sorenseni* all differ from *C. knudseni* in having prominent striae on the spiral whorls. *Conus attenuatus,* by contrast, is low conical with very elongate body whorl and low to moderately low spire. The prominent protoconch, carinate shoulder and distinct concave tops of the spiral whorls also distinguish this species from *C. knudseni.*

Like *Conus sorenseni,* this is a very rare, albeit unspectacular, cone (only three specimens were collected). Further collections are required not only to describe the radula, operculum and soft parts of the living animals, but also to ascertain the extent of variation in the anatomy of the adult shells of the two *Conus* species.

Deposition of material: The holotype and paratype 1 are in the collection of the Zoological Museum, Copenhagen; paratype 2 is in the author's collection.

Etymology: This new taxon honors my good friend and fellow conchologist, Dr. Jørgen Knudsen, Zoological Museum, Copenhagen.

Literature Cited

Dall, William Healey
1889. Report on the Mollusca. Pt. 11, Gastropoda and Scaphopoda, Blake Report, Bull. Mus. comp. Zool. Harv., 18: 1-492

Lewis, J. B.
1965. A preliminary description of some marine benthic communities from Barbados, West Indies. Can. J. Zool., 43: 1049-1074

Explanation of Figures *1* to *4*

Figure *1: Conus sorenseni* Sander, spec. nov.; 1, 2 and 3 denote paratypes no. 1, 2 and 3,respectively; 4, holotype.
Figure *2: Conus sorenseni* Sander, spec. nov.; 1, 2 and 3 denote paratypes no. 1, 2 and 3,respectively; 4, holotype.
Figure *3: Conus knudseni* Sander, spec. nov.; 1 and 2 denote paratypes no. 1 and 2,respectively; 3 holotype.
Figure *4: Conus knudseni* Sander, spec. nov.; 1 and 2 denote paratypes no. 1 and 2,respectively; 3, holotype.